

Emergency Operations Center Capability Study

Executive Analysis of Fire Service Operations in Emergency Management

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Abstract

There has never been a time in history where disasters affecting large populations have been so frequent and challenging to local government leadership than today. Quarantelli, (1972) stated, “Emergency Operations Centers (EOC’s) have in recent years, become standard features of disaster activities in most American communities” (p. 5). An Emergency Operating Center (EOC) is located within the Town of North Providence.

The problem which prompted this research was that the state of readiness of the EOC has never been evaluated, as required by the Town Emergency Operating Plan.

The purpose of this research project was to gauge the current policies, procedures, communications capabilities, and logistics against what is prescribed in current guidelines and to conduct via survey, a risk analysis and vulnerability study of the Town. The research questions posed were: what the overall understanding held by personnel was of the Emergency Operations Plan; what was the history of EOC, its’ equipment, and applicability to the Town as prescribed in the EOP; what the understanding of operations were by all personnel; what the defined responsibilities and levels of authority were of personnel operating within an EOC; and what the most serious perceived threat to the community was, necessitating the activation of the EOC.

Employing evaluative methodology, interviews and risk analysis studies proved that the Towns’ greatest liabilities are its location, topography, and population density. Changes in Town leadership created an unfamiliarity with the idiom of EOC integration. Training, reauthorization, and defined responsibility within a unified command system were necessary to manage resources proactively.

Regulating these problems requires vision and leadership before a disaster occurs. Belief in the systems that are unfamiliar but proven will successfully direct government managers charged with the

protection of life and property. By drawing upon the vast amount of experience Town personnel bring, preemptive management will guide the municipality toward one goal--disaster mitigation.

Table of Contents

| | |
|-----------------------------------|----|
| Introduction | 5 |
| Background and Significance | 6 |
| Literature Review | 8 |
| Procedures | 12 |
| Results | 16 |
| Discussion..... | 18 |
| Recommendations | 26 |
| Reference List..... | 31 |
| Appendix A..... | 33 |
| Appendix B..... | 36 |
| Appendix C | 38 |
| Appendix D | 40 |
| Appendix E..... | 44 |

Introduction

The need for government to plan and act accordingly in times of wide spread artificial or natural disaster has never been demonstrated as clearly as it has in the last decade. Miller (1998), reported, “Since the beginning of 1997, more than 16,000, have been killed worldwide by the weather and nearly 50 billion dollars in damage has been done. In the U.S. the figures are 456 dead and 13 billion dollars lost” (p. 40). Nature’s fury has devastated whole communities within hours. “Local governments’ ability to provide emergency management and recovery for the community has been extremely taxing on the available resource, personnel, and the economy” (P. McLaughlin, personal communication, April 27, 1998). Quarantelli (1972), stated, “Emergency Operations Centers (EOC’s) have in recent years, become standard features of disaster activities in most American communities” (p. 52). Recent acts of aggression have occurred by extremist factions that have destroyed their targets while simultaneously crippling the surrounding community. The loss of life and damage to property from such violent acts has overwhelmed local government's ability to manage emergency operations. “...[N]o one government agency can work autonomously to mitigate such circumstances” (W. Giannini, personal communication, January 12, 1998). “Circumstances such as these have confirmed to be the greatest challenge of a community’s leadership” (R. Murgallis, personal communication, April 20, 1998).

The Focus

“An Emergency Operating Center (EOC) is located within the Town of North Providence (Town) Police/Fire Headquarters at 1967 Mineral Spring Avenue (J. Leyden, personal interview, June 20, 1998).

The problem which prompted this research was that the state of readiness of the EOC has never been evaluated, as required by the Town Emergency Operating Plan (NPEOP, p. 3). As a result,

concerns have been raised that "...[T]he existing EOC may not meet the operational requirements of an actual emergency" (A. Zarlenga, personal communication, May 20, 1998).

The purpose of this research project was to compare and assess the current policies, procedures, communications capabilities, and logistics necessary to equip an EOC, against what is prescribed in the current FEMA guidelines and to conduct, via survey, a risk analysis and vulnerability study of the Town. The following research questions were posed:

1. What was the overall opinion of the Emergency Operations Plan and its' directives?
2. What was the history of EOC, it's equipment, and applicability to the Town as prescribed in the EOP?
3. What was the current perception of operations by all personnel and the defined responsibilities and levels of authority of personnel operating within an EOC?
4. What is the most serious threat to the community that would necessitate the activation of the EOC?

The research questions were answered by evaluative research methodology employing closed ended surveys, personal interviews of key personnel who would be involved in staff level decision-making, physical inspection of available areas and resources for intended use, and a review of current literature as a guide for reference and comparison.

Background and Significance

The Town of North Providence was set off from Congress in 1789, but on three separate occasions, sections of it was reannexed from Providence, with an additional piece of land joined to Pawtucket. North Providence's early history is closely intermingled with Providence and Pawtucket from these annexations (RIEDC, 1996).

North Providence is centrally located in the Providence metropolitan area and borders on more suburban communities. Major highways provide easy access to North Providence from any point in the state and connects the town to Woonsocket on the north and to Providence on the south. Although North Providence is the smallest town in the state, its size has not impeded it from becoming a bustling suburban community. In addition, North Providence has experienced a significant rate of residential growth. Over two thirds of the Towns residential civilian labor force are employed in various occupations in other areas throughout the state (RIEDC, 1996).

Demographics:

The population count for the town of North Providence as of April 1, 1990, was 32,090. This count represented a 9.9% change (2092) from the 1980 population of 29,188. In 1990 North Providence ranked number 7 in population among Rhode Islands cities and towns (RIEDC, 1996).

North Providence contains 14,702 kilometers of land area (5.676 Sq. Miles) and .321 square kilometers of water area (0.124 Sq. Miles). Total area is 15.023 kilometers or 5.800 square miles. The 1990 population density of North Providence is 5,532 persons per square mile of land area (RIEDC, 1996).

In 1990, 26,435 persons residing in North Providence were 18 years of age or older with the majority (32.5%) between 24 and 44 years old respectfully. The second highest age group by total

population are classified as elderly. The median age is 37.4 for all people residing in Town (Bureau of Census, Washington, 1991).

As of April 6, 1998, the Rhode Island Economic Development corporation had compiled a comprehensive database regarding North Providence with regard to Housing and Population. The following statistics are gleaned from this report:

The total number of housing units in the Town of North Providence as of April 1, 1990, was 14,134. This represented a 24.6% change from the 11,343 housing units in 1980. There are 13,257 households in North Providence—it is commonly referred to as a bedroom community. Of the 14,134 housing units in the town, 37% are over 30 years old while (61.5%) the majority are newer than 30 years old and employ lighter weight construction (Bureau of Census, Washington, 1991).

The public water supply is supplied by the Providence Water company which is fed by the Scituate reservoir. This single source serves 99% of the community (Bureau of Census, Washington, 1991).

Approximately 53% of the total households are occupied by families with 2.38 people per household. The elderly group has 1,646 people living in individual units. The majority (79%) of elderly live in rent controlled apartment complexes of 10 units or more (Bureau of Census, Washington, 1991, p. 7).

This research project relates to the course Executive Analysis of Fire Service Operations in Emergency Management by employing the methodology described within Chapter 6 of the Executive Analysis of Fire Service Operations in Emergency Management student text to conduct a risk analysis and vulnerability study of the Town with regard to the Emergency Operations Center.

Literature Review

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (RTSDREAA) enacted by Congress, recognizes emergency management as a joint responsibility of Federal, State, and Local government. Congress defines a role that includes providing necessary direction, coordination, and guidance for the Nation's emergency management system, to include: "...[T]echnical assistance to the States in developing comprehensive plans and programs for preparation against disasters" (RTSDREAA, 1998, Sec. 601).

Experts predict that for the foreseeable future disasters will occur more frequently, will be more destructive, and will require more and better coordination of response resources. Disasters in American society are increasing and will continue to mount for several reasons....new disaster agents, such as chronic and sudden chemical hazards are emerging as a result of technological developments. Second, greater numbers of people are at risk, both because of migration and settlement trends and because of lifestyle transitions. The greater social and economic interdependence which characterizes our modern way of life means that the potential now exists for more massive disasters, with regional and even nationwide impact. Technological hazards pose different, and often more difficult, management problems than do natural hazards. Contributing factors to this greater difficulty are the unfamiliarity and newness of technological hazards; the lack of accumulated experience with control or coping measures; the less understood hazard chains; the broader opportunities for control intervention; the perceived amenability of technological hazards to fixes; and the simultaneous need to enlarge benefits and reduce risks in judging the tolerance of technological hazards in instituting control strategies.

Floods and hurricanes, the two most numerous and costly natural disasters in the United States can be expected to cause even more damage due population growth and development in high hazard areas (FEMA, 1998).

Perry (1991) endorses EOC's by commenting, "Whatever the structure of the local emergency management unit, the key to disaster response is the emergency operations center" (p. 52).

Congress has recognized emergency management as a joint responsibility between Federal, State, and Local governments. "In our country's system of emergency management, local government must act first to attend to the public's emergency needs. Depending on the nature and size of the emergency, State and Federal assistance may be provided to the local jurisdiction" (FEMA, 1996, p. iii).

A comprehensive assessment of the current North Providence Emergency Operating Plan (NPEOP) was conducted as part of the Literature review requirement for this project within the Learning Resource Center at the National Fire Academy. The State and Local Guide for Emergency All Hazard Planning (SLG) encourages this assessment need by stating:

The written EOP should be checked for its conformity to applicable regulatory requirements and the standards of Federal or State agency (as appropriate) – and for its usefulness in practice. Further, conduct of a table top exercise involving the key representatives of each tasked organization may serve as a practical and useful means to help validate the plan (FEMA, 1996, p. 12).

The North Providence Emergency Operating Plan (NPEOP), has not been evaluated for conformity to regulatory requirements or application of the plan in over 11 years. However, within the

current NPEOP are provisions which direct periodic review. Section VIII; under Plan Development and Maintenance stipulates:

The Rhode Island Emergency Management Agency (RIEMA) will provide guidance and technical support to assist in maintenance and update this plan as required. Responsible officials in local agencies should recommend changes at any time and provide information periodically as to changes of personnel and available resources (NPEOP, 1987, p.17).

The SLG strengthens timely recommendations with, “The EOP is a living document. Problems emerge, situations change, gaps become apparent, Federal requirements are altered—and the EOP must be adapted to remain useful and up-to-date” (FEMA, 1996 p 12). The NPEOP (1987) concludes with:

...[T]his plan must be activated from time to time, in the form of an exercise (simulated emergency) in order to provide practical; controlled emergency operations experience to those who have direction and control responsibilities and to ensure the readiness of local emergency agencies” (par I-2).

The EOC’s Management and Operations instructors guide (FEMA, July 1995) endorses this concept by stating:

It is important to recognize that the EOC’s layout and configuration will change many times over the years based in experience and evaluation. The optimum layout can be determined only through exercises or actual emergency operation. It is not uncommon for it to take several activations to determine just what the best configuration really is (p.IG-1-14).

The need for exercise and training for familiarity and update is clear when considering how intricate and interdependent the various agencies’ responsibilities are in an EOC. Quarantelli, (1972)

stated, “Overall, local EOC’s tend to have too many people in them, do not always have the ‘right’ representatives, and suffer somewhat from lack of internal management and coordination of the people present” (p. 57).

In summary, the literature review validated the necessity for periodic assessment of the emergency operating plan and its application within an emergency operating center. Training and constant evaluation is of paramount importance when considering the dynamic nature of an activated EOC. Directives from the Federal Emergency Management Agency, the Emergency Management Institute, and the Department of Defense Civil Defense Guides to name a few, have dedicated volumes of literature to maintenance of the EOP and organization of the EOC. Quarantelli’s analysis and endorsements clarified existing problems within the NPEOP and directed solutions that were factual and functional within the Town.

Procedures

The research criteria used to conduct a vulnerability study was guided in part by the text in the Executive Analysis of Fire Service Operations in Emergency Management course offered at the National Fire Academy, Emmitsburg, Maryland. As part of the assessment, a seven question survey was administered to the personnel who work for the Town in an effort to draw upon the experience of the emergency services providers (see appendix A). Within this closed ended survey, were questions that were developed to assess:

- The amount work experience of those responding to gauge tenure.
- The rank of individuals completing the survey to assess their level of responsibility.

- Respondents familiarity of the Emergency Operating Center and table of organization thereof.
- Respondents experience in working under a unified command system.
- The recognition of at least 5 (out of a possible 9) of the most significant threats to the community to draw upon accumulated experiences.
- Whether respondents would like to participate in EOC simulation training to gauge the awareness of the staff of their deficiencies.

A Hazard Identification chart was used to gauge the possibility of the top 5 hazard choices and the number of potential victims which could be expected thereof. The results of the Hazard Identification were then taken as key factors to rank the vulnerability of each chosen hazard.

Excerpts were taken from discussions with Providence Fire Deputy Assistant Chief William T. Giannini, during a Terrorism Awareness Lecture January 12, 1998, and from discussions with Deputy Chief Robert Murgallis, Santa Clara Fire Department, at the National Fire Academy, Emmitsburg, MD, April 20, 1998.

A personal interview was conducted with Chief Phil McLaughlin at the National Fire Academy, Emmitsburg, April 27, 1998. Chief McLaughlin was the lead instructor for the Executive Analysis of Fire Service Operations in Emergency Management course held April 20-May 2, 1998.

On May 14, an assessment was made of the EOC room to determine the physical dimensions, ancillary equipment, communications equipment and supporting logistics available to operate the emergency operate center.

Mayor A. Ralph Mollis was interviewed May 20, 1998. Mr. Mollis is the Mayor of North Providence and by NPEOP stipulation, would be the Chief of Operations in the event of an EOC activation.

A personal interview was conducted with North Providence Police Major William Deluca, June 12, 1998. Major Deluca was the Operations Chief in the North Providence Police Department.

A series of interviews were held beginning June 19, 1998, with Civil Defense Director John T. Leyden in his office at the Division of Inspections in North Providence.

A personal interview was conducted with Mr. Ronald Costa, the physical plant engineer and Town Buildings Maintenance Director, June 29, 1998. Mr. Costa was interviewed to disclose all pertinent data regarding the construction and operating characteristics of the EOC complex.

A personal interview was conducted with Retired Fire Chief Bernard Charello, July 10, 1998. Chief Charello, a 30 year veteran of the North Providence Fire Department (NPFD), was interviewed for historical data with regard to the establishment of the EOC.

A personal interview was held with Battalion Chief Jack Lane on July 17, 1998. Chief Lane is responsible for collateral operations in technical rescue situations.

A personal interview was held with Battalion Chief Andrew Zarlenga on May 20, 1998. Chief Zarlenga is the Fire Department Liaison Officer.

The EOC status for the Town was researched in July, 1998 to review all available documents pertaining to the EOC.

During the first interview with Director Leyden (June 19 1998), the topics of discussion were:

- How much money is currently allocated for Civil Defense?
- What is the location/capacity of the shelter(s)?

- Which agency is responsible for the shelters' logistical support?
- What are the lines of secession within multiple operational periods?
- Has there been an organizational meeting with the supervisors of the various town agencies which would be involved in actual EOC operations?
- What were the staffing and security requirements that are/are not in place by the 1987 mandate?
- What was the present condition of the operating equipment?
- What were the most pressing issues to address in the EOC?
- Which elements of an incident command system would be employed during activation?

On May 15, 1998, an interview was conducted with Thomas DeAngelis who is the Communications Director for the Town of North Providence, Rhode Island. Mr. DeAngelis has been the Director of Communications for the past 5 years. During his tenure as Director, Mr. DeAngelis has been involved with communications systems, equipment, purchase and maintenance. The communications division is comprised of seven men and women. The topics of discussion were:

- Elements of the auxiliary power supply, equipment and staffing of the communications center.
- The level of training of dispatchers in EOC operations?
- Current funding allocation to the EOC.

A vulnerability study was conducted as part of the total assessment requested of the respondents employing the top five choices of Question 3 (see appendix D). The vulnerability study was used as directed by Chapter 6 of the EAFSOEM text. The survey was given to all Town

Emergency services providers as well as any personnel who were known to have had past experiences with Town emergency management.

A literature review was conducted of all available documents appropriate to the current funding allocations within the Town regarding Public Safety.

The elements of the survey were developed and administered to acquire an overall understanding of the Emergency Operations Plan and its directives, the EOC and its history, equipment, and applicability to the Town as prescribed in the EOP; the current understanding of operations by all personnel; and the defined responsibilities and levels of authority of personnel operating within an EOC.

The survey and subsequent interviews were administered to personnel who were Town Emergency Services providers. The limitations of the procedure were that a fundamental understanding of the facts specific to North Providence was necessary to facilitate the survey and interviews. Questions pertinent to North Providence, the EOP, or EOC may not apply to any other municipality. The respondents were chosen to participate because of their tenure within the system and familiarity with the intricacies of emergency services within the Town.

Results

Research Question 1 queried the overall opinion of the Emergency Operations Plan and its' directives. As indicated, Survey Question 4 assessed the familiarity of those responding with the EOC in North Providence. Sixty eight percent of those who answered had no familiarization with the NPEOC (see appendix C). The lack of familiarization was also evident in those whom were interviewed by the fact that application questions would have been answered through training as directed by the NPEOP but were not.

Question 2 attempted to clarify the history of the EOC, it's equipment, and applicability to the Town as prescribed in the EOP. Throughout the interview process, the commonalties of misinformation with regard to span of control, inappropriate funding priorities, and inadequate equipment issues prevailed to identify poor management over time.

Question 3 pertained to the current perception of operations by all personnel and the defined responsibilities and levels of authority of personnel operating within an EOC. Survey Question 5 rated the experience levels of those responding within a Unified Command system (see appendix C). Although 56% answered affirmatively, an unexpected finding of this question revealed confusion between the North Providence Incident Command system with the EOC unified command concept. Judgment of these percentages are therefore, not indicative of actual understanding of question 5 or Unified Command concepts and should not be considered a baseline of understanding (see appendix C).

Research Question 4 resulted in identifying the most serious threat to the community which would necessitate the activation of the EOC. Survey Question 3 queried opinions of the five (out of nine) most significant threats to the community. The possible choices included: Natural

Disasters/Flooding; Terrorism; Conflagration; Natural Disaster/Hurricane; Natural Disaster/Tornado; Plane Crash; Hazardous Materials Incident; Winter Storm (see Appendix A).

The results of the survey demonstrated the aggregate of common attitudes and beliefs. Among the personnel who responded, the majority (90%) believe the highest risk to the Town, with the highest probability of occurrence, was an Hazardous Materials Incident, Natural Disaster -Hurricane, Mass Casualty Incident, Winter Storm, and Natural Disaster-Flooding. Below is a clarification of respondents choices (see appendix B).

The top 5 hazards chosen by respondents which had 'Possible' or 'Likely Probability' were Hazardous Materials incident, Hurricane-86%, Mass Casualty incident-80%, Winter Storm 68%, Natural Disaster/Flooding-43% (see appendix D, Matrix 1).

The Vulnerability Assessment (EAFSOEM p. SM 4-43) ranking clarified the top five hazards chosen. The Hazards were rated as low, moderate, or high in Town vulnerability (see appendix D, Matrix 2). Winter Storm, Hurricane, and Flood had been chosen by respondents equally in risk rating (see appendix D, Matrix 3) when analyzed in terms of Danger/Destruction potential, Economic impact, Environmental impact, Negative Social impact, and level of Political Planning focus. However, the Natural Hazard/Hurricane choice had the most substantial potential for Town wide casualties and property damage as chosen by respondents (see appendix D, Matrix 2).

Discussion

The use of EOC's are widely endorsed. In his first text book on municipal emergency management, Perry (1991) stated, "Whatever the structure of the local emergency management unit, the key to disaster response is the emergency operations center" (p. 73).

"The Department of Public Safety was established in January 1974" (The North Providence Town Charter, 1974, p. 17). Since 1987, staffing for the Police/Fire and Public services has increased over the years. One reason for the increases was due to the increase in community services needed to accommodate the demographic growth of the Town. The Town experienced a 24.6% increase in housing units between 1980 and 1990. During that growth phase, lighter weight construction methods and materials were employed thereby heightening the possibility of wide spread residential damage or destruction due to the effects of a hurricane.

The probability for an Hazardous Materials Incident is increased by the main routes of transportation passing through Town. The Town is north of and adjacent to the City of Providence. It is bounded by the Towns of Smithfield and Lincoln to the north, the City of Pawtucket to the east, the City of Providence to the south, and the Town of Johnston to the west.

The Town must be traversed by all transportation delivery vehicles from the Providence industrial district and the Port of Providence. Service deliveries are accomplished by traversing various metropolitan areas north via four lane highway which crosses the east side of town into Massachusetts. The main route traversing east to west through the center of Town connects major metropolitan and industrialized areas of Pawtucket to the western part of the state.

The opportunity for large scale operations exists out of possession of the public utilities serving the Town. Ninety nine percent of the Town's water is supplied from a single source, the Scituate

Reservoir (Bureau of Census, Washington, 1991). In the event of a disruption of service, with 5,532 people per square mile, the logistical requirements would necessitate a well coordinated multiagency response facilitated by the EOC for potable water.

During a lecture conducted at the National Fire Academy, Deputy Chief Robert Murgallis, stated, "...[Y]our EOP should be checked periodically to ensure it is current, accurate, and specific enough to meet the potential needs of your community in a disaster" (excerpt from lecture, April 20, 1998).

"...[I]n the 24 years I have has been involved with Emergency Services for the Town, there has never been a multiagency town-wide disaster drill where the EOC has been tested" (Battalion Chief Lane, personal interview, July 17, 1998). Since the inception of the Emergency Operations Plan, there has been two occasions where the EOC was utilized. "The last time we used it, there were large problems with span of control, scope of authority and communications flow" (T. DeAngelis, personal interview, July 13, 1998).

The age distribution and housing variances present an enormous logistical problem for the Town, which would necessitate the use of the EOC. In the event of a major disaster such as the after effects of a hurricane, sheltering, transportation, animal control, medical supply for those on daily medication, and communications channels would challenge the Town's emergency service providers. This scenario must be organized well in advance and understood by all those charged with the various tasks, forcing the Town to reevaluate its preparedness philosophy. When considering the Town is largely of residential occupancy, a hurricane also presents the challenge of debris removal, fire control, public security, emergency medical services redistribution and coordination of ancillary services.

The survey was distributed to the emergency services providers within the Town. The average length of service, and experiences of the personnel provided a wide base from which to extract an assessment of topics covered. Those polled also represented the largest population of Town public service providers from which to survey.

John T. Leyden Jr. is the Director of the Civil Defense Division and has served 27 years as a Rhode Island State Trooper, retiring as second in command. During the interview, funding and training concerns were considered by Mr. Leyden to be the most pressing issues facing the EOC at this time by stating:

...[M]ost of the moneys allocated for Civil Defense are used as salary for the Civil Defense Director. Very little if any goes to equipment purchase or projected logistical needs. The Town seems to believe that in the event of an emergency greater than is normally handled on a daily basis, those agencies (i.e. Police, Fire, Public Works) would be able to handle them. Where it is understood that each agency can and does handle their own routine emergencies, what is not learned is the amount of coordination that is necessary to work together on a large scale where success depends upon multiagency coordination. Because of this, there is a sense of complacency which is difficult to overcome (J. Leyden, personal interview, June 20, 1998).

Of the \$42,962.00 allocated in the Communications budget, "...[N]one of that money is scheduled to replace or repair any existing equipment that would be used in the EOC" (DeAngelis personal interview, May 15, 1998). DeAngelis also added, "...[M]ost of the communications equipment currently available and in use would serve as the EOC equipment if necessary. We would have to strip the other areas to equip it (EOC)" (T. DeAngelis, personal interview, May 15, 1998).

The current budgeted allotment for the fiscal year 98-99 for Public Safety is \$9,524,076 (North Providence Budget Summary Fiscal year 1998-1999). The breakdown of appropriations is clarified in Table 1 below.

Table 1

| Appropriations | FY 1997-98 Budget | FY 1998-99 Budget | Increase (Decrease) |
|----------------------------|-----------------------|-----------------------|---------------------|
| Fire Department | \$4,559,423.00 | \$4,996,011.00 | 436,588.00 |
| Police Department | \$4,150,523.00 | \$42,962.00 | \$103,728.00 |
| Communications Div. | \$42,300.00 | \$120,087.00 | \$662.00 |
| Div. of inspections | \$117,831.00 | | \$2,256.00 |
| Civil Defense | \$5,715.00 | \$5,765.00 | \$50.00 |
| Fire Hydrants | \$110,000.00 | \$105,000.00 | \$(5000.00) |
| Total Public Safety | \$8,985,792.00 | \$9,524,876.00 | \$538,284.00 |

During discussion regarding the topographical makeup and access routes Leyden also added, "...[B]ecause of the waterways we have in proximity to large residential areas, and the main routes of travel used through this town, we have greater potential for problems than our surrounding communities" (J. Leyden, personal interview, August 9, 1998).

On the issues of shelter locations and logistical support Leyden (1998) stated that: "...[I]nitially we had no coordination with any agency regarding sheltering the Townspeople. When I realized this, I coordinated efforts between the School Department and the Red Cross. We have since identified the North Providence High School as the main shelter for the Town with

the Red Cross assuming the logistical support for the shelter. The high school complex should be able to shelter up to about 2000 people and if needed, we could use the other schools and some fire stations as shelters if necessary. However, that is not widely known to the Townspeople at this time. To get the information out we would use the State Emergency Broadcast system, the Rhode Island Law Enforcement Telecommunications Systems (RILETS) and the Civil Defense State Radio Systems (CDSTARS) if necessary (J. Leyden, personal interview, June 20, 1998).

Regarding early warning, Leyden specified, "...[T]he early warning system is comprised of ten sirens strategically placed throughout the Town. To date, none of them are in working order" (J. Leyden, personal interview, June 20, 1998).

In 1987, the NPEOP had determined, "The Local Warning System is considered to be insufficient to notify all residents and, therefore, resolved that mobile warning-using public safety vehicles with public address amplifiers-will be dispatched to areas not serviced by the Local Warning system" (NPEOP, Annex B p.II-1). Leyden also stated that, "...[I]n the event of need for mass notification we would use the local media for most notices and if necessary public address systems from available town vehicles" (J. Leyden, personal interview, June 20, 1998).

"Operational periods within an EOC must be firmly incorporated, and the lines of secession must be empowered to act within their jurisdiction" (R. Murgallis, personal interview, April 20, 1998). During interview, Leyden readily admitted "...[N]o set periods have been established at this time" and concerning authority to act he believed that "...[I]ndividual departments are aware of their abilities and tend to understand where the limits of their jurisdiction are" (J. Leyden, personal interview, June 20, 1998).

The NPEOP does not outline considerations for operational periods, and considering the transience of the tenure of directorship within the last five years, it is unrealistic to expect such considerations to have been scrutinized.

The NPEOP states, “Communication direct to adjoining communities and the State Emergency Management Agency, when telephone is available via CDSTARS” (NPEOP, Annex A, p. 1). Before Mr. Leyden was appointed as CD Director, the CDSTARS phone system was out of service “...[F]or more than a year, but little by little we are getting on track and now we are connected to the rest of the state” (J. Leyden, personal interview, June 20, 1998).

The NPEOP also directs the Town to “Take such steps as necessary to bring all communication personnel to a maximum degree of operational readiness” (NPEOP Annex A, p. 35). Annex D of the NPEOP is very specific in its direction stating, “Training and exercising programs must be made available to enhance the capability of government and the public for disaster readiness response measures and to provide for capable disaster response workers.” However, regarding training, DeAngelis states, “None of the people that are working now in the communications center have had training in multiagency interfacing during an EOC operational period” (T. DeAngelis, personal interview, May 15, 1998). Battalion Chief Lane continued with “...[M]ost of the fire personnel on the job today have never been trained in EOC operations and as a result are unaware of how different this system is when compared to the day to day operations” (J. Lane, personal interview, July 17, 1998). Director Leyden concluded with, “...[E]very department runs well within itself with the Fire Department being the most proficient in Incident Command. What the Town needs is a broader understanding which can only be achieved through cross training and application of the processes” (J. Leyden, personal interview, June 20, 1998).

The Police/Fire headquarters complex is used as the EOC nerve center when necessary. “The squad room is presently used for daily business, staff meetings, shift briefings and community affairs meetings” (Major W. Deluca, personal interview, June 12, 1998).

“The building was built in 1974 and originally intended to be used as a police complex. Federal grant money was acquired and the Fire Department headquarters was added in the plans” (Fire Chief Charello (ret.), personal interview, July 10, 1998). “The area that the EOC would use in the event a Natural or Manmade disaster should occur would be within the Police/Fire complex” (T. DeAngelis, personal interview, May 15, 1998). When asked about the squad rooms’ intended used as an EOC and the provisions for equipping it as such, DeAngelis stated “No one really thinks about it, so it doesn’t get considered. Over time this (EOC) has been really neglected by not funding it (EOC) or equipping it properly” (T. DeAngelis, personal interview, May 15, 1998).

During the interview, Director Leyden readily admitted, “...[B]ecause we don’t operate in this (EOC) mode too often it (EOC) tends to be confused with regular emergency service, consequently, planning, logistics, and funding considerations are neglected” (J. Leyden, personal interview, June 20, 1998).

The site has an independent power source capable of sustaining power to the main and auxiliary radios, as well as lighting ability for “...[A]s long as 150 hours without refueling, however we do have the opportunity to connect an emergency line directly to an auxiliary 5000 gallon diesel tank in the compound” (R. Costa, personal interview, June 29, 1998).

The North Providence EOC has had five different Civil Defense Directors in the last six years. With each change of political leadership came the admission of a new Civil Defense Director. Quarantelli (1972) suggests, “...[W]ith membership constantly changing it is difficult to maintain

continuity in decision making” (p. 52). Leyden concurred with this statement stating, “...[W]ith the last few changes in leadership of the EOC, we are not as organized as we should be but we are slowly making changes” (J. Leyden, personal interview, June 19, 1998).

It is important to note that no significant consideration to life or property disaster mitigation/planning occurred during this growth period and there was no documentation available to verify training.

In order for a multiagency table top exercise to be conducted it must be thoroughly planned. “Training and exercising programs are made available to enhance the capability of government and the public for disaster readiness, response measures and to provide for capable disaster response workers” (NPEOP, p. D-1). Continuity, practical application and training are vital aspects of a well organized and efficient EOC. Frequent Directorship changes have stalled this process. “For an EOC to run smoothly, everyone must understand their roles and relationships within an EOC” (Phil McLaughlin, personal interview, April 27, 1998).

During an interview regarding communications equipment which was stored specifically for the EOC, DeAngelis stated, “...[M]ost of this equipment does not work and hasn’t been tested in quite some time” (T. DeAngelis, personal interview, June 14, 1998). As for specific communications equipment which is dedicated to the EOC, there were three rotary telephones which are intended to be used for interagency communications.

The most significant deficiency of the North Providence Emergency Operating Plan has was a lack of awareness, and absence of familiarity within operational intricacies of an active EOC by personnel. This conclusion is demonstrated by the results of survey question number 7 (see appendix C). Ironically, the remedy poses an extremely low financial impact upon the Town, because there are

qualified instructors well versed in organizational theory to deliver instruction to all personnel operating within an EOC.

Over time, there have been many personnel changes. Various levels of capability exist. Lack of documentation proves there has been no training of personnel who would operate in the EOC.

The Towns' EOP is a sound document which has withstood the test of time when compared to today's government issued guidelines. When compared to the more recent plans developed, the North Providence Emergency Operating Plan satisfies all the necessary policy requirements by government standards. "If a plan is to be effective, its contents must be known and understood by those who are responsible for its implementation" (NPEOP, 1987, p. 17). The issue therefore is not how the EOP directs the Towns' key officials but rather how the Town's key officials have applied the EOP.

Recommendations

Quarantelli (1972) recommends "...[T]he problems and difficulties are of the kind that can be solved with better pre-planning, more realistic training exercises and simulations, and a willingness of communities to allocate necessary resources" (p. 3).

The vision of a highly trained and proactive staff must be diligently pursued over the shortest reasonable course of time. To accomplish this will require an organized effort from all responsible agencies working as a policy/planning group within a unified command condition to define the roles and responsibilities of agencies and organizations expected to contribute to the protection of people and property. The policy group should be comprised of, but not limited to the following:

- The Civil Defense Director or designee.
- The Mayor and/or his designee.

- The Town Council President.
- The Town Finance Director.
- The Town Attorney.
- The Town Building Inspector.
- The Police Chief and/or his designee.
- The Fire Chief and/or his designee.
- The Department of Elderly Affairs.
- The Superintendent of Schools.
- The School Committee Chairperson and/or his designee.
- A representative from the local area Hospital.
- The Public Works Director.
- The Director of Communications.
- The Animal Control Officer.
- A representative from the Red Cross.
- Others as needed.

Policy

The Policy/Planning group must determine the scope of all vital services which may be needed in times of emergency or disaster affecting the Town. Available services must be analyzed to assess the ability of each agency with respect to resources and equipment inventories, staffing, and training to carry out predicted responsibilities. Logistical, Staffing, Equipment and Training requirements will be clarified within the predetermined parameters for all involved agencies. Clarification of parameters through these

assessments will also enable Town managers to accumulate realistic data on which to base future budgetary considerations for the EOC.

Task Assignments should be identified pertinent to particular agencies within the scope of their abilities. Current research reveals there is no clear understanding of where the lines of authority begin and end within the NPEOP. The Colorado Springs Office of Emergency Management makes recommendations for each agency head reflective of scope of responsibility for each division. These recommendations would satisfy the guidelines necessary to clearly define the scope of responsibilities for the Town (see appendix E).

Training

Training and familiarization of procedures within a unified command system must be integrated within the day to day management techniques. The Fire Department has eight Rhode Island State certified Fire Service instructors who are capable of delivering incremental training in Incident Command to all necessary personnel very economically. The objective of training should be to create a basic understanding of:

- Terminology
- Chain of Command
- Command Staff responsibilities
- Limitations of scope of authority
- Common communications protocol
- Documentation
- EOC equipment orientation

The details of the EOP must be thoroughly understood by all personnel. “Standardization through a systems approach to managing emergencies is the key to success. By following set procedures and reasonable guidelines, the odds of a positive conclusion at emergency incidents is increased” (EAFSOEM, 1997, p. 3-4).

Staffing

Research of the typical operations which would probably occur identified several issues which must be addressed, organized and understood by all as standard operating procedure before the actual event.

The lines of secession must be clarified to ensure unified control. All personnel authorized to commit resources in areas of Planning, Logistics, Finance, and Operations should be identified as section Chiefs. Each Section Chief should be provided with clerical staff for processing messages and record keeping. The Town is capable of accommodating all clerical personnel needs with available staff from various areas within the Town Hall administration building while operating a skeleton staff for basic needs while the Town is engaged in an EOC condition. The Federal Civil Defense Guide (1967) recommends, “Personnel to staff the EOC facility would be drawn primarily from existing departments of government, though the staff may also include nongovernment personnel for the resource functions provided under local emergency plans” (p. 7). However, in the event of an emergency which necessitates the activation of the EOC, a separate standard of operations and duty assignments must be agreed upon, contractually if necessary, and understood by all Town Hall administrative staff.

Operational periods should be established within the EOC. No unauthorized personnel should be permitted within the EOC upon activation. With the changing of each period, considerations of briefing, food, shelter, and human resources needs should be ordered to facilitate the next time period

for all operating staff within the EOC. Supporting agencies (i.e. Fire, Police) are already operating in preestablished time periods, but consideration should be given to facilitate information exchange during operational staffing changes.

The EOC is housed concurrently within the Police/Fire complex. Geographically, this is the best location for its intended use. However, a consideration should be made for an alternate site in the event of a catastrophic event which would render the primary site unusable. The Town Hall or the North Providence High School could be utilized if necessary. Logistical considerations should facilitate these possibilities.

As part of my commitment to the community, a summary of the findings of the research completed and recommendations submitted shall be compiled and submitted to the Mayor and Civil Defense director of the Town for review. All reference material, and current government standards shall be made available for further perusal by any department head for discussion and/or implementation. All considerations will be directed towards and recommendations to prepare the Towns' EOC in the event of disaster.

Managing these problems requires vision and leadership to preemptively manage the risk before a disaster occurs. Community leaders must remain vigilant in maintaining the commitment to prepare for these challenges. By drawing upon the vast amount of experience the North Providence personnel bring, and employing current and existing standards which guide today's municipalities toward disaster mitigation, government managers charged with the protection of life and property will be successful.

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Appendix A

A Risk Analysis and Vulnerability Study for the Town of North Providence

Please take a moment to fill this survey out completely. The results of the analysis will be posted as part of the project when it is completed. This survey is part of an Applied Research Project for the EFOP program I am enrolled in. Thank You.

1. How many years have you been involved with Emergency Services?

- a. 1-5 years
- b. 6-10 years
- c. 11-15 years
- d. over 16 years

2.) What is your rank?

- a. Firefighter
- b. Lieutenant
- c. Captain
- d. Battalion/Deputy Chief

3. In your opinion, what are the 5 most significant threats to our community at this time?

(circle only five)

- a. Natural Disaster-Flooding
- b. Terrorism affecting a place of Public Assembly
- c. Conflagration
- d. Natural Disaster-Hurricane
- e. Natural Disaster-Tornado
- f. Plane Crash
- g. Hazardous Materials Incident
- h. Mass Casualty Incident
- i. Winter Storm

4. Have you been familiarized with the Emergency Operations Center in North Providence?

- a. Yes
- b. No

5. Have you ever worked within a Unified Command system?

- a. Yes
- b. No

6. Have you seen the Table of Organization for the EOC in North Providence?

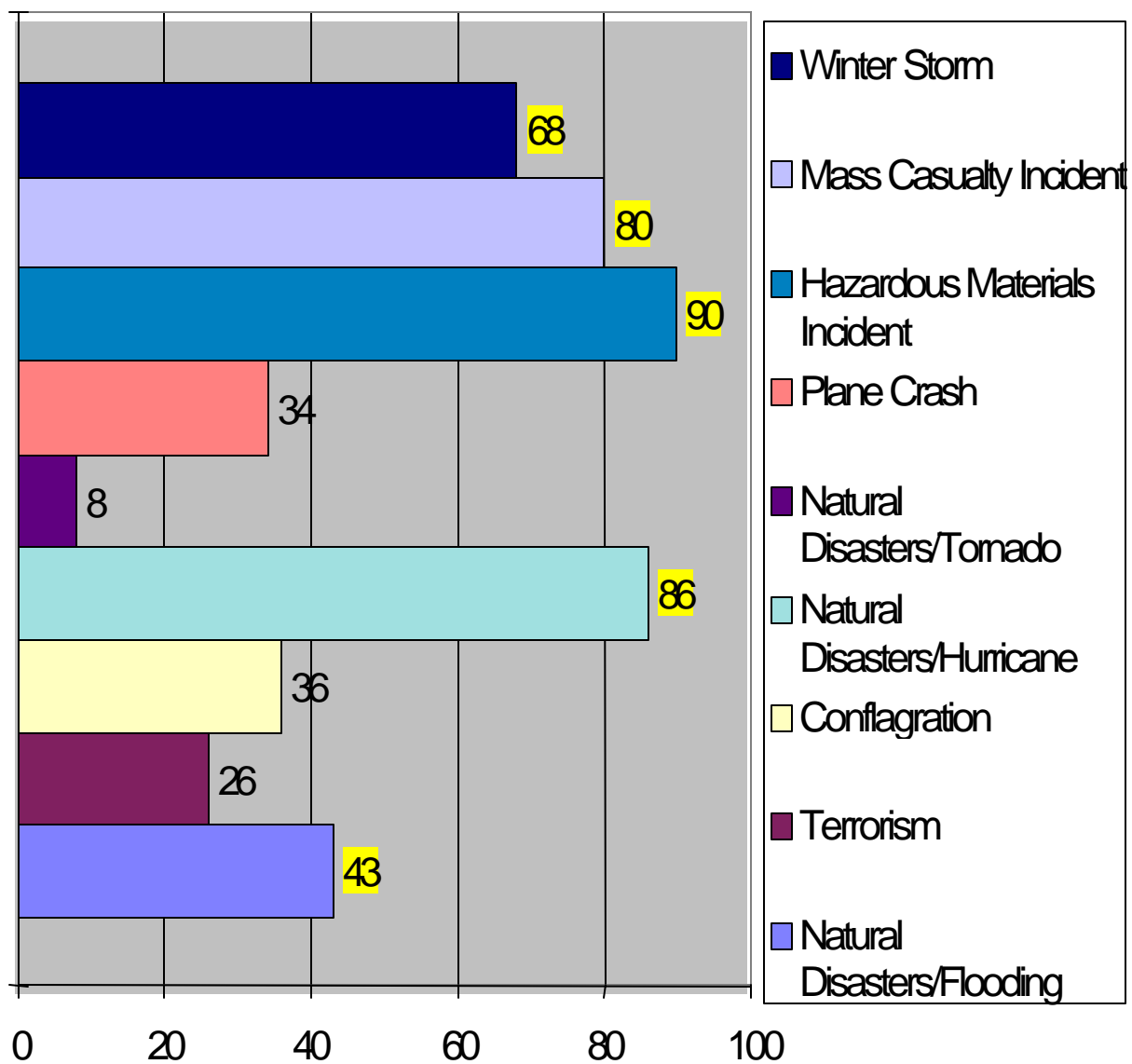
- a. Yes
- b. No

7. Would you like to participate in EOC simulation exercises to increase your understanding of your role within an EOC?

a. Yes

b. No

Appendix B



Appendix C

Survey Results of Risk Analysis and Vulnerability Study for the Town of North Providence

1. How many years have you been involved in Emergency Services?

| | |
|------------------|-----|
| a. 1-5 years | 10% |
| b. 6-10 years | 18% |
| c. 11-15 years | 30% |
| d. Over 16 years | 42% |

2. What is your rank?

| | |
|--------------------|-----|
| a. Firefighter | 62% |
| b. Lieutenant | 22% |
| c. Captain | 10% |
| d. Battalion Chief | 4% |
| e. Other | 2% |

3. In your opinion, what are the five most significant threats to our community at this time?

| | |
|---|-----|
| a. Natural Disaster/ Flooding | 46% |
| b. Terrorism affecting a place of Public Assembly | 28% |
| c. Conflagration | 36% |
| d. Natural Disaster/ Hurricane | 86% |
| e. Natural Disaster/ Tornado | 8% |
| f. Plane Crash | 34% |
| g. Hazardous Materials Incident | 90% |
| h. Mass Casualty Incident | 80% |
| i. Winter Storm | 68% |

4. Have you been familiarized with the Emergency Operations Center in North Providence?

| | |
|--------|-----|
| a. Yes | 32% |
| b. No | 68% |

5. Have you ever worked under a Unified Command system?

| | |
|--------|-----|
| a. Yes | 56% |
| b. No | 44% |

6. Have you ever seen the Table of Organization for the EOC in North Providence?

| | |
|--------|-----|
| a. Yes | 28% |
| b. No | 72% |

7. Would you like to participate in EOC simulation exercises to increase your understanding of your role within the EOC?

| | |
|--------|-----|
| a. Yes | 82% |
| b. No | 18% |

Appendix D

Hazard Matrix 1 Identification

| List 5 most possible hazards. | What is probability this hazard will occur? | What is your best estimate of the total population that could be affected seriously by this hazard? |
|-------------------------------|---|---|
| 1. Hazardous Materials | 1. unlikely <input type="checkbox"/> 2. possible <input checked="" type="checkbox"/> 3. likely <input type="checkbox"/> | _____12,000_____ ENTER A NUMBER |
| 2. Hurricane | 1. unlikely <input type="checkbox"/> 2. possible <input checked="" type="checkbox"/> 3. likely <input type="checkbox"/> | _____32,000_____ ENTER A NUMBER |
| 3. Mass Casualty | 1. unlikely <input type="checkbox"/> 2. possible <input checked="" type="checkbox"/> 3. likely <input type="checkbox"/> | _____400_____ ENTER A NUMBER |
| 4. Winter Storm | 1. unlikely <input type="checkbox"/> 2. possible <input checked="" type="checkbox"/> 3. likely <input type="checkbox"/> | _____32,000_____ ENTER A NUMBER |
| 5. Flood | 1. unlikely <input type="checkbox"/> 2. possible <input type="checkbox"/> 3. likely <input checked="" type="checkbox"/> | _____5,000_____ ENTER A NUMBER |

Matrix 2-Vulnerability Assessment

| | HazMat | Hurricane | Mass Casualty | Winter Storm | Flood |
|--|----------|-----------|---------------|--------------|----------|
| Hazards | | | | | |
| Impact Rating | | | | | |
| Danger/Destruction (High=3; Moderate=2; Low=1) | 1 | 3 | 2 | 3 | 2 |
| Economic (Permanant=3; Temporary=2; Immediate Short Term=1) | 2 | 2 | 1 | 2 | 2 |
| Environmental (High=3; Moderate=2; Low=1) | 3 | 3 | 1 | 3 | 2 |
| Social (High=3; Moderate=2; Low=1) | 2 | 3 | 3 | 3 | 3 |
| Political Planning Level (Local=1; Regional=2; Federal=3) | 1 | 3 | 1 | 2 | 1 |
| Total vulnerability Rating (Sum of all factors) | 9 | 14 | 8 | 13 | 10 |
| Rank | | | | | |
| 5 to 8 LOW | | | Low | | |
| 9 to 11 MODERATE | Moderate | | | | Moderate |
| 12 to 15 HIGH | | High | | High | |

Matrix 3-Risk Rating

| | Probability of Occurrence | | | Vulnerability | | | Risk |
|------------------|---------------------------|---------------------|---------------------|---------------|-------------------|--------------|---------------|
| 5Hazards | Likely (3) | Possible (2) | Unlikely (3) | High-3 | Moderate-2 | Low-1 | Rating |
| HazMat | | 2 | | | 2 | | 4 |
| Hurricane | | 2 | | 3 | | | 6 |
| Mass Casualty | | 2 | | | 2 | | 4 |
| Winter Storm | | 2 | | 3 | | | 6 |
| Flood | 3 | | | | 2 | | 6 |

Appendix E

| Agency/Head | Task/Responsibility |
|---|--|
| The Civil Defense Director or designee. | EOC Procedures/Notification of Government Officials/Logistical supply for the EOC. |
| The Mayor and Staff. | Current operations/Planning/Coordination and Implementation. |
| The Town Council President. | Current Operations/Planning/Shelters. |
| The Town Finance Director. | Planning, Development and Finance/Vital Records. |
| The Town Attorney. | Vital Records/Liaison to Government officials. |
| The Town Building Inspector. | Damage Assessment/Concurrent Responsibilities. |
| The Fire Chief and/or his designee. | Fire Suppression/Hazardous Materials Incident/Decontamination/Explosion and Fire/Search and Rescue/Emergency Medical Services/Command Post Operations/ Emergency Notification/Liaison to Government Agencies. |
| The Police Chief and/or his designee. | Acts of Terrorism/Civil Disturbance/EOC Security/Damage Assessment/Warning Notification Law and Order/Concurrent Responsibilities. |
| The Department of Elderly Affairs. | Sheltering/Human Services/Vital Records Transportation/Social Services. |
| The Superintendent of Schools. | Shelters/Planning/Vital Record Keeping. |
| The School Committee Chairperson | Planning/Logistics/Liaison to Emergency Medical |

A local area Hospital representative

Health and Medical/Concurrent Responsibilities.

The Public Works Director.

Debris Removal/Flood Control/Concurrent
Responsibilities.

The Animal Control Officer.

Shelter.

A representative form the Red Cross.

Health and Human Services, Shelters/
Logistics.

The Communications Director

Communications Center Control/Concurrent
Responsibilities.

Others as needed.

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EAFSOEM
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